Microsoft

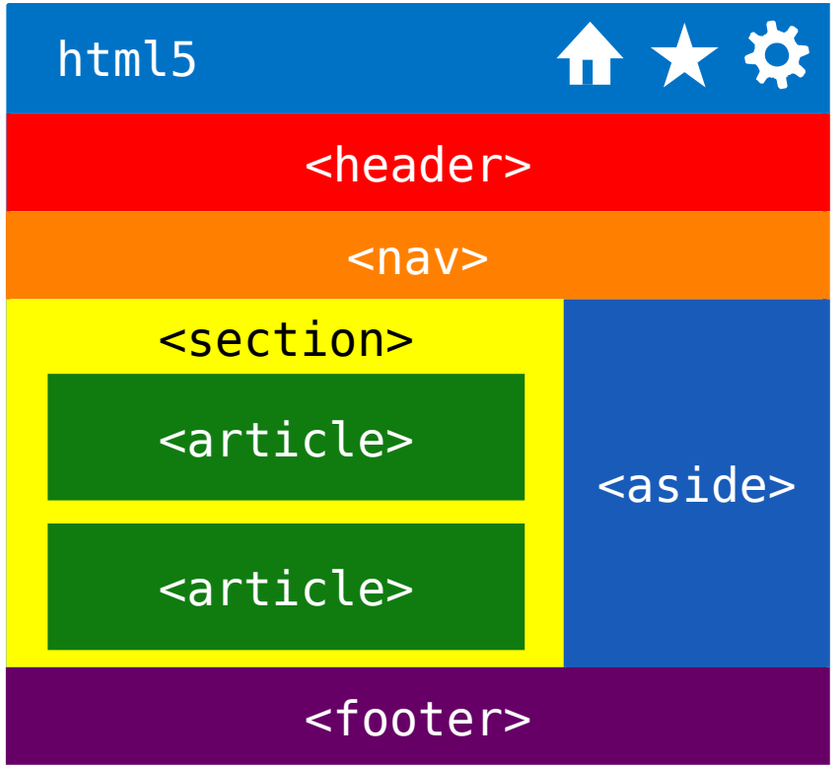
Building the User Interface with HTML5

2.4. Choose and configure HTML5 tags to organize content and forms.
2.5. Choose and configure HTML5 tags for input and validation.

Agenda

1	Semantic HTML
2	Tables and Lists
3	Input and Forms
4	Form Validation

Semantic HTML



Organizing Content and Forms

- HTML5 has introduced several new elements for organizing content and forms on Web pages
- The new tags for organizing content are `<header>`, `<section>`, and `<footer>`
- The names of these tags are representative of **semantic markup**

Semantic Markup

- Semantic markup ensures that tag names match with the function that a tag performs
  - For example, the `<footer>` tag is used to create the footer of a Web page
- In HTML 4.01 and before, developers had to rely on the use of the `<div>` tag to perform a variety of functions.
  - The “div” from the `<div>` tag is short for division

HTML5

```
<footer>Footer</footer>
```

HTML 4.01

```
<div id=“footer”>Footer</footer>
```

The tag

Use of the tag typically requires the use of the class or id attributes

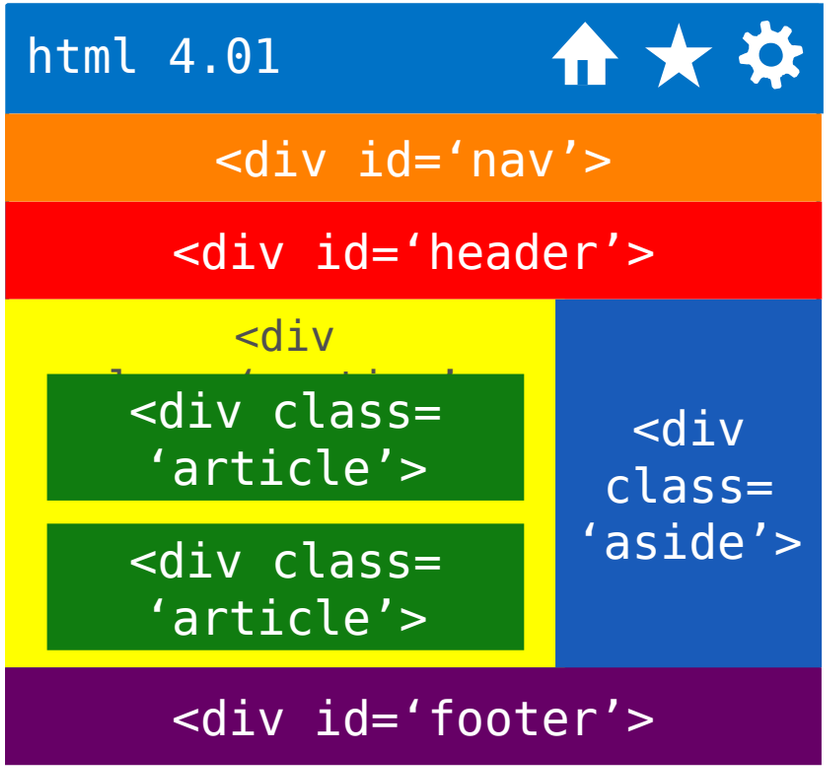
- class and id are global attributes, which means that they can be used with all HTML elements

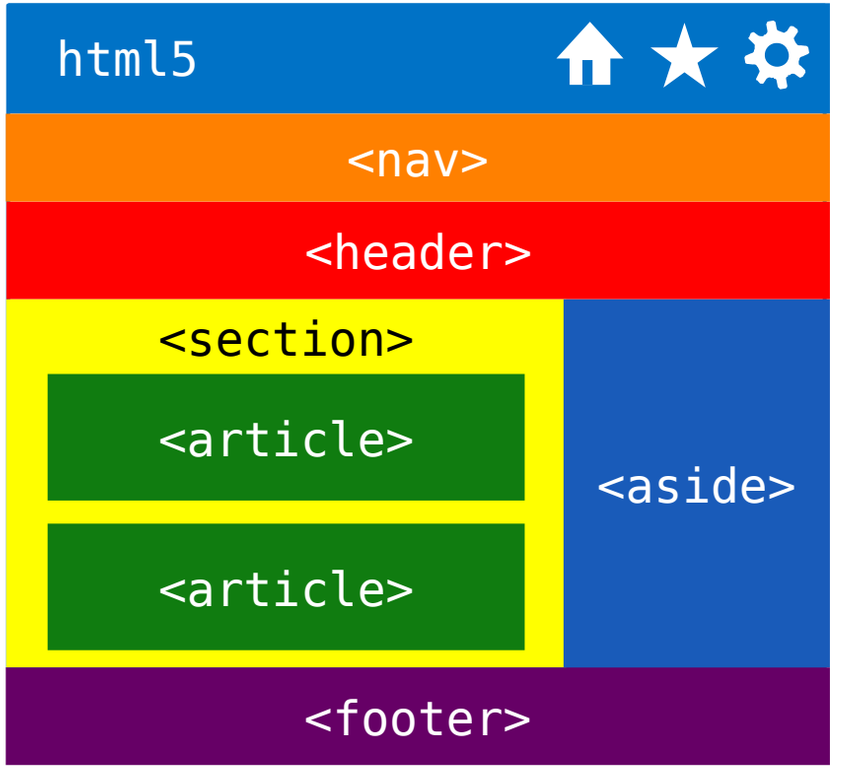
The class and id can be assigned any value by a developer

- class is used to identify a group of elements
- id is used to identify individual elements

```
<div id=”about">
   <div id=”about_stella">
     <img src=“dog.jpg" alt=”My awesome dog, Stella." />
     <div id="slogan">Happy dogs are good dogs</div>
   </div>
</div>
```

Markup in HTML 4.01 vs. HTML5





Structural Tags

TAG	DESCRIPTION
<address>	Defines an area for contact information for a page or section
<article>	Defines an article, such as a magazine or newspaper article, blog post, or similar content
<aside>	Defines content that’s separate from but related to the page content; similar to a sidebar in book chapters and magazine articles
<details>	Contains additional details pertinent to text around it; creates an interactive widget a user can display or hide
<footer>	Defines a footer for a document or section; may include the document author, contact information, copyright information, and links to terms of use
<header>	Defines a header for a document or section; may contain introductory content or navigation links
<hgroup>	Groups headings and subheadings (using the <h1> to <h6> tags) for multi-level headings
<nav>	Defines a block of navigation links
<section>	Defines a section in a document, such as chapters, parts of a thesis, or parts of a Web page whose content is distinct from each other
<summary>	Defines a visible heading for a details element; user can click to display or hide information

The header and footer Elements

The <header> element defines the header for a Web page, article, or document

- A header typically features titles, logos, or photos and may be the first thing a user sees upon visiting a site

The <footer> element defines a footer for a Web page, article, or document and are typically located at the bottom

- A footer typically features information about a page, such as the copyright date, miscellaneous links,

```
<article>
  <header>
   <h1>Learning HTML5</h1>
   <h2>Semantic Elements</h2>
  </header>
  <p>These HTML5 tags are great!
</p>
  <footer>
   <p>Published: <time
datetime="2015-06-
   20”>June 20, 2015</time></p>
  </footer>
</article>
```

The `section` Element

- The `<section>` element defines sections in a document or Web page
- There are certain situations where other tags should be used, including:

SITUATION	USE
Separate content that is independent from other content on the page	`article`
Plan to syndicate a block of content	`article`
Create a sidebar	`aside`
Wrap and position multiple sections that are not related to each other	`div`

The hgroup element

- The <hgroup> element is used to group headings
- This allows you to organize heading tags, but won't impact the way things look on a web page

```
<section>
  <hgroup>
    <h1>HTML5</h1>
    <h3>Structuring a Web
   page</h3>
  </hgroup>
  <article>
   <p>With semantic tags,
structuring a web page is  easier
than ever before!</p>
  </article>
</section>
```

The nav Element

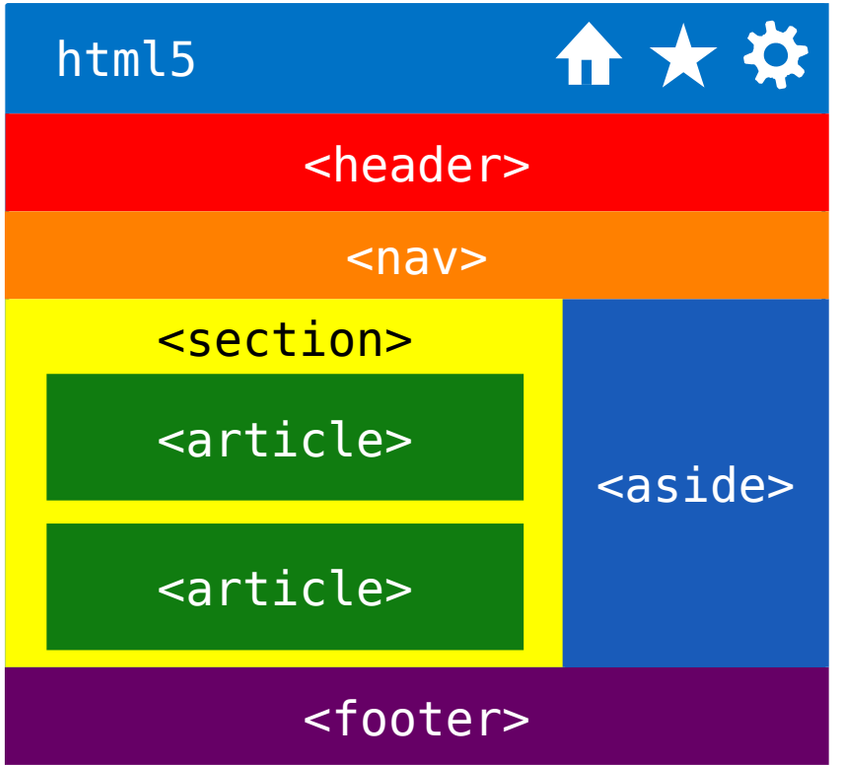
The <nav> element is used to organize links that allow users to navigate from one page to another

- The <nav> tag shouldn’t be used for every link on a page, but rather to group the links together

```
<nav>
   <a href="/html/">HTML</a>
   <a href="/css/">CSS</a>
   <a
href=”/javascript/">JavaScript</a>
</nav>
```

The article and aside Elements

- The <article> element defines independent, self-contained content
  - An example of self-contained content could be a news article or a blog entry
- The <aside> element is used to set aside a subset of content from the overall content
  - It’s important to note that the aside tag doesn’t change how the content appears on the page
  - If you want to change the placement of an element, then you will have to use CSS to do so



Tables and Lists

Creating Tables

- Tables consist of columns and rows, and they display content in a grid
- To create a table with HTML, you will use a combination of the tags featured in the table below

<table>	creates a table
<tr>	creates rows
<th>	creates headers
<td>	creates cells within rows (columns)
<colgroup>	used to apply styles to a range of columns
<thead>	marks a group of header rows
<tfoot>	marks a group of footer rows
<tbody>	used to format groups of rows
<caption>	marks text as a caption

Table Demo

```
<caption>Number of hours worked on thesis.</caption>
<table border="1">
     <tr>
          <th>Month</th>
          <th>Hours</th>
     </tr>
     <tr>
          <td>April</td>
          <td>100</td>
     </tr>
     <tr>
          <td>June</td>
          <td>45</td>
     </tr>
     <tr>
          <td>July</td>
          <td>120</td>
     </tr>
</table>
```

Creating Lists

- There are two primary types of lists in HTML5: ordered and unordered
- Ordered lists use the <ol> tag and order items in a list using numbers
- Unordered lists use the <ul> tag and display items in a bulleted list
- You can add items to both types of lists using the <li> tag

ORDERED LISTS

```
<h3>Favorite Foods</h3>
<ol>
  <li>Pizza</li>
  <li>Cake</li>
</ol>
```

UNORDERED LISTS

```
<h3>Seattle To-Do List</h3>
<ul>
   <li>Visit Space Needle</li>
   <li>Buy rain jacket</li>
</ul>
```

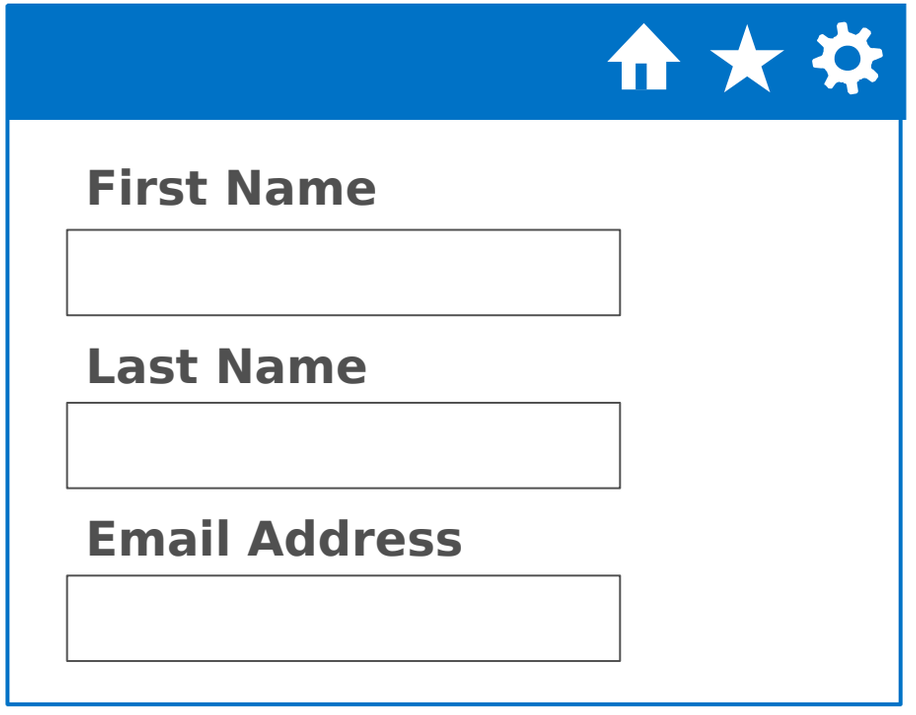
Lists Demo

```
<body>
    <h3>Favorite Foods</h3>
    <ol>
       <li>Pizza</li>
       <li>Cake</li>
    </ol>

    <h3>Seattle To-Do List</h3>
    <ul>
       <li>Visit Space Needle</li>
       <li>Buy rain jacket</li>
    </ul>
</body>
```

Input and Forms

Web Forms



- A **Web form** is a page that features input fields where users enter data
- **Form input**, or the data supplied by users, is sent to a server where it is processed and stored
- Web forms are commonly used when making purchases, signing up for newsletters, or completing surveys

Form Creation

Create a form using the <form> element

- It’s common practice to use an id attribute with forms

The <label> element displays a label for each field

The <input> element is used to dictate the type of input that is expected

```
<form id="contact" method="post" action="">
  <label for=“firstName">First Name</label>
  <input type="text" name=“firstName" /><br/>
  <label for=“lastName">Last Name</label>
  <input type="text" name=“lastName" /><br/>
  <label for="email">Email</label>
  <input type="email" name="email" /><br/>
</form>
```

Types of Input

INPUT TYPE	DESCRIPTION
`text`	Creates a text field
`password`	Creates a password field that
`submit`	Creates a submit button
`radio`	Creates a radio button that can be selected
`checkbox`	Creates a checkbox field that can be checked
`date`	Requires users to enter a valid date
`email`	Requires users to enter a valid email address
`search`	Creates a search field

Input Attributes and Values

There are a number of attributes that can be used with the <input> element to enhance Web forms

- Use the autofocus attribute to point the focus to a specific input field when a Web page loads
- Use the required attribute when a field is required
- Use the placeholder attribute to add text to a field that will help users know what to enter

autofocus

```
<input type="text" name="firstName"
   autofocus="autofocus" />
```

required

```
<input type=”email” required />
```

placeholder

```
<input type="text" name="firstName"
   placeholder="First Name" />
```

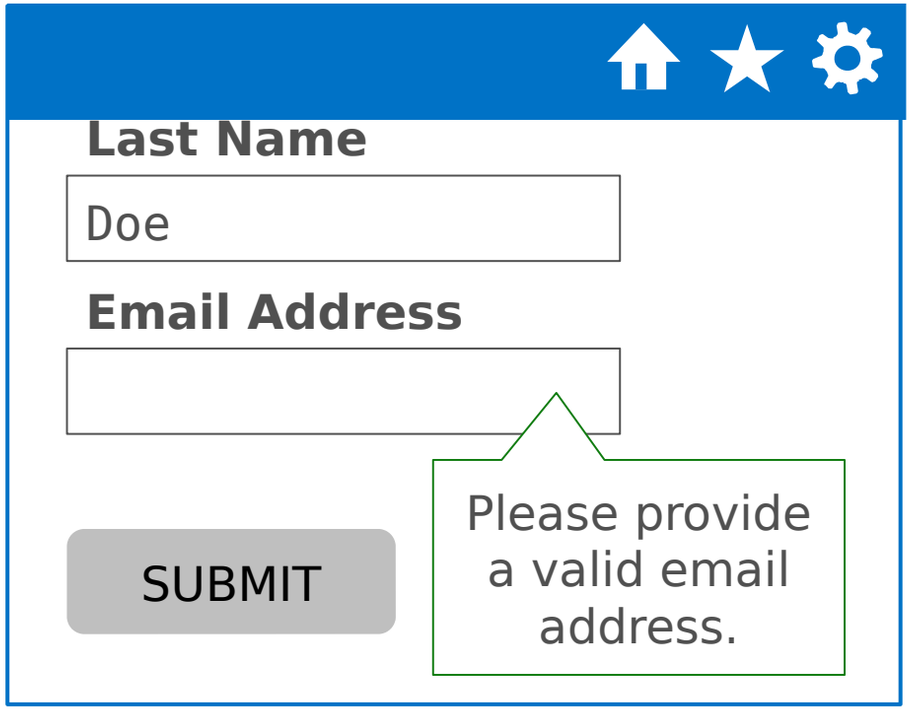
Web Form Demo

```
 <body>
     <h1>Form Demo!</h1>
     <form id="contact" method="post" action="">
       <label for=“firstName">First Name</label>
       <input type="text" name=“firstName" placeholder="First
Name"/><br/>
       <label for=“lastName">Last Name</label>
       <input type="text" name=“lastName" placeholder="Last Name"/><br/>
       <label for="email">Email</label>
       <input type="email" name="email" placeholder="Email
Address”/><br/>
        <label for="password">Password</label>
       <input type="password" name="password"
placeholder="Password"/><br/>
        <input type="submit" name="submit" value="submit">
    </form>
 </body>
```

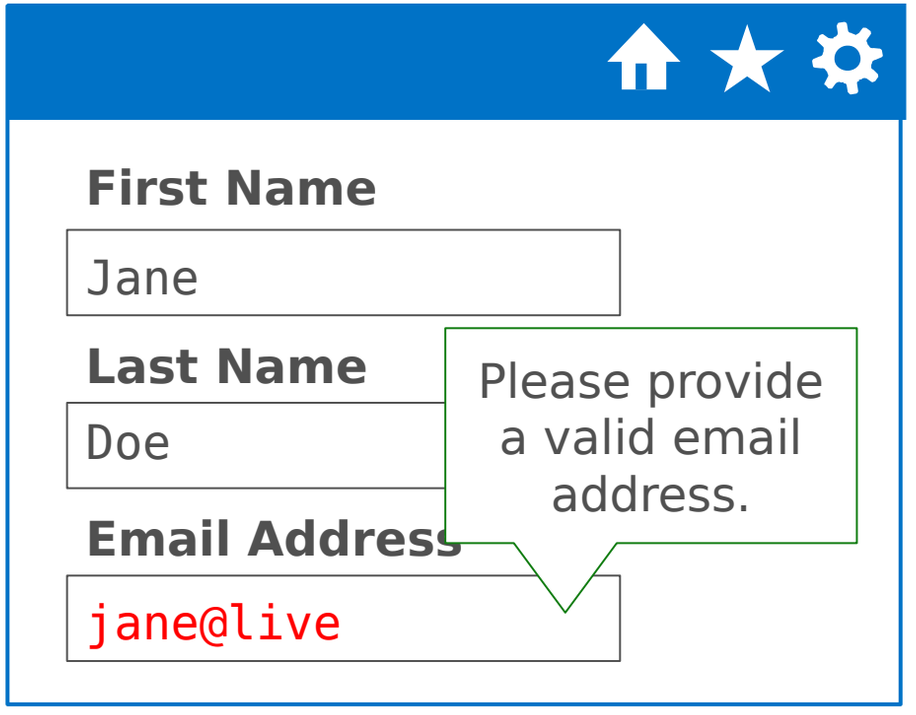
Form Validation

Form Validation

- Validation is the process of verifying that the information obtained from a form is in the appropriate format
- Common issues that arise with forms are:
  - empty fields
  - invalid email addresses
  - invalid dates
  - text vs. numbers and vice versa
- In HTML 4.01, validation required the use of JavaScript, but HTML5 now offers **automatic validation**



Client-Side Validation



- When a browser validates data provided by a user, it is called **client-side validation**
  - if validation is performed by a server, then it's called server-side validation
- If a user enters the wrong value into a form field, then the browser will instruct them to correct the error
  - the browser determines if the data is valid by reading attributes in the form's tags, such as the `pattern` attribute

Summary

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2	Tables and Lists
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4	Form Validation

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